

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Patent Application of:	Hirokazu OOE et al.	<b>Before the Board of Appeals</b>
Application No.:	10/535,700	Confirmation No.: 7918
Filed:	January 27, 2006	Art Unit: 1711
For:	ION ELUTING UNIT AND DEVICE LOADED WITH SAME	Examiner: Jason Mark HECKERT

**REPLY BRIEF**

**MS APPEAL BRIEF-PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The present Reply Brief is submitted in response to the Examiner's Answer dated March 11, 2011.

For clarity, the grounds of rejection for review on appeal presented in the Appeal Brief filed January 13, 2011, will be repeated, and the Reply to the Examiner's Answer (hereinafter "EA") will correspond structurally to the arguments section in the Appeal Brief (hereinafter "AB").

**I. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The Final Office Action provides two (2) grounds of rejection for review on appeal.

- 1) Claims 2, 4, 10-13, 17-20, and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 2001-276484 (hereinafter '484 to be consistent with the outstanding Final Action) in view of Walsh (Canadian Patent Application Publication No. 2,242,101, hereinafter "Walsh").
- 2) Claims 5-9, 14-16, and 21-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over '484 in view of Walsh in further view of Robey (JP 2000-343081, Hereinafter '081 to be consistent with the outstanding Final Action).

**II. REPLY TO NEW POINTS OF ARGUMENT RAISED BY THE EXAMINER'S ANSWER****A. 103(a) Rejection of claims 2, 4, 10-13, 17-20 and 24****1. Independent Claims 2 and 24**

Page 4 (at lines 8-11) of the "EA" erroneously suggests that Walsh somehow teaches the timing mechanism control suggested at page 4, lines 8-10 is what allows "the unit to provide effective biocidal concentrations of ions without discoloration or damage to the appliance." This statement is pure fiction created by the Examiner not a teaching or suggestion by Walsh. To whatever extent that numbered lines 8-10 on page 4 of Walsh teach that the swimming pool cell could **optionally** "include a timing mechanism (not shown), whereby the cell is activated for only part of the time, e.g., 3 hours on, followed by 3 hours off, with a further option of reversing the polarity of electrodes," There is no hint by Walsh that the use of this "optional timing mechanism (not shown)" will have any effect whatsoever on providing "effective biocidal concentrations of ions without discoloration or damage to the appliance" as erroneously asserted by the Examiner.

As the paragraph bridging pages 6 and 7 of the "AB" noted, "the **optional** use of polarity reversal of the electrodes with halt periods of cell operation (when no purification by ion elution is possible) has nothing to do with purifying the water ["effective biocidal concentrations of ions"] as the water is purified with or without such reversals of polarity, and most certainly in spite of any halt periods." The erroneous allegation as to operating so as to avoid "discoloration"

was noted to be a clearly erroneous statement in the first full paragraph on page 7 of the “AB” as follows:

Moreover, it is the addition of zinc to the electrode that is the improvement offered by Walsh in order to avoid pool discoloration problems, not the alternate operation of an electrode as an anode and then as a cathode, with or without the three hour halt periods. Note page 2, numbered lines 8-9 and 19-20 that identify this improvement. Further note page 1 (at numbered lines 17-26) that establishes that the known systems using copper/silver alloy electrodes (without zinc) and with these electrodes “operated, alternatively, as a cathode then anode over a set time interval, under control of a microprocessor,” still had the drawback of discoloration as noted in numbered lines 24-26 on page 1. Thus the apparent further rationale offered at page 3, lines 6-7, that addition of the optional use of polarity reversal of the electrodes with the suggested three hour halt periods of cell operation would provide “effective biocidal concentrations of ions without discoloration or damage to the appliance” clearly makes no sense.

As has been previously pointed out to the Examiner the disclosure of Walsh contains absolutely no disclosure of any reason or benefit that arises from using the optional “timing mechanism (not shown), whereby the cell is activated for only part of the time, e.g., 3 hours on, followed by 3 hours off, with a further option of reversing the polarity of electrodes.” The Examiner simply erroneously ignores this point as if it was never mentioned and continues to create new teachings that do not exist in the references relied upon.

The “Response to Argument” starting at page 6 of the “EA” further contains many inaccurate and erroneous allegations. For example, the first full paragraph on page 6 argues that the “apparatus in which the devices are contained are not even germane to the instant application until claim 17” at page 6 of the “EA.” This argument does not logically or reasonably rebut appellant’s argument that the references themselves are incompatible at pages 5-6 of the “AB.” This is because the washing machine and associated washing machine cycle times and components of ‘484 Walsh are not comparable to or compatible with either the cycle times or components of a swimming pool, spa, or like device.

Second, the “EA” offers a continued erroneous finding (at page 6 of the “EA”) alleging that “practicing the methods of Walsh-complete with an application halt period and reversal of polarities—will provide the benefits disclosed by Walsh.” This finding is a clearly erroneous restatement of the above-noted erroneous finding now recast as being benefits including “producing biocidal concentrations of ions and preventing discoloration of equipment.” As fully

explained above and repeatedly in the “AB,” to whatever extent that Walsh teaches an option of reversing polarities and adding a halt period suitable for a swimming pool (e.g., 3 hours on, followed by 3 hours off, with a further option of reversing the polarity of electrodes”), there is no hint by Walsh that this will have any beneficial effect on “biocidal concentrations of ions and preventing discoloration of equipment.” As noted above, Walsh has no hint of any benefit as to the swimming pool that will be provided by following the optional suggestion (“e.g., 3 hours on, followed by 3 hours off, with a further option of reversing the polarity of electrodes”).

Third, instead of pointing to the required teaching or suggestion that appears in Walsh of providing the claimed adjustability of the time periods, the Examiner simply “considers such a mechanism [apparently the optional timing mechanism] to be capable of adjusting time periods.” The reasoning why a timing mechanism that is only disclosed to provide fixed time intervals can be presumed to be inherently capable of providing the claimed adjustability of the time periods is completely absent. This is a violation of precedent. *See Ex parte Skinner*, 2 USPQ2d 1788, 1789 (BPAI 1986) noting that “the examiner must provide some evidence or scientific reasoning to establish the reasonableness of the examiner’s belief that the functional limitation is an inherent characteristic of the prior art.”

As an alternative to relying on the merely assumed characteristics of the timing mechanism, the paragraph bridging pages 6 and 7 of the “EA” simply note that a “controller” is taught, without specifying where, and alleging that a controller combined with the timing mechanism [apparently the optional timing mechanism] is considered to be fully capable of performing as claimed.” This alternative cannot be reasonably evaluated because the nature of the “controller” is unknown and there is no teaching or suggestion by Walsh that this unknown controller, presumably an electrical element, is to be combined with the merely optional timing mechanism, seemingly a mechanical (“mechanism”) element. However, such expansion of reference teachings using unfounded assumptions and/or speculation cannot be substituted for actual reference teachings. *See In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967) (“The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not, ... , resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis.”).

To whatever extent that the decisions cited at page 7 of the “EA” (*Ex parte Wikdahl*, *Ex parte McCullough*, *In re Finsterwalder*, and *In re Casey*) might support the general proposition

that the “manner in which an apparatus operates is not germane to the issue of patentability of apparatus itself, that proposition dealing with an intended use of an apparatus is no excuse for the above-noted speculation that the “EA” attempts to pass off as a finding of fact based upon actual reference teachings.

## **2. Dependent Claim 4**

With respect to claim 4, the bottom of page 4 of the “EA” simply notes that the references both disclose adjusting current to an appropriate level and a general principle that “[v]oltage modulation is well known to affect current by Ohm’s Law.” The “EA” ignores the following points raised at page 10 of the “AB” that stated that:

Claim 4 recites that the “control unit” must “control the drive unit to adjust the voltage applied to the electrodes during at least one of the first adjustable voltage application period and the second adjustable voltage application period such that a constant current flow between the electrodes can be maintained.”

Clearly more than simply adjusting current to an appropriate level using voltage modulation (as argued in paragraph 4 of page 3 of the outstanding Final Action) is required. Claim 4 specifically requires that the claimed adjusting of voltage must occur “during at least one of the first adjustable voltage application period and the second adjustable voltage application period” and it must result in “a constant current flow between the electrodes” (emphasis added) being maintained. The Examiner violates at least the above-noted *Wilder* decision in his interpretation of claim 4 subject matter.

Also, the statement at page 3 of the above-noted Advisory Action that “the applicant is asserting that modifying voltage is patentable” is in error. What is asserted to be patentable is the above-noted subject matter of claim 4 that is once again improperly ignored by the Examiner. The further observance here and in the Final Action that it is well known to affect current by voltage based upon “Ohm’s law” has no reasonable applicability to the above-noted claim 4 requirement that applied voltage must be adjusted to achieve “a constant current flow between the electrodes.” The Examiner commits yet another clear error in ignoring the claim limitation and/or assuming that the relied upon references teach what they do not teach.

## **3. Dependent Claim 11**

The treatment of the extensive argument offered as to dependent claim 11 at pages 10 -12 of the “AB” is further ignored. Instead of answering any of these arguments and the authorities supporting them, the last three sentences at the end of the last full paragraph on page 4 of the “EA” merely note a generality in terms of “Walsh teaching control of an ion dissolution rate” coupled with the observation that “ion dissolution rate is related to current, which both Walsh

and ‘484 disclose as controllable parameter.” No attempt is made to address the actual limitations of dependent claim 11 and how these merely noted generalities coupled with the assertion that “‘484 also teaches flow rate monitoring” leads to establishing a valid rejection was made as to dependent claim 11.

**B. 103(a) Rejection of Claims 5-9, 14-16, and 21-23**

**1. Claim 5**

Turning to claim 5, the “EA” again treats this claim as merely detecting current between the electrodes (for overload or otherwise) which is taught by Robey. However, and as noted at the bottom of page 10 of the “AB,” Claim 5 recites more than just a current detection unit to detect current between the electrodes. Once again, the Examiner simply improperly ignores limitations not taught by the cited references as being “intended use of the apparatus and cites decisions fully discussed and shown to be irrelevant at pages 12-14 of the “AB.”

Besides offering erroneous conclusions of “intended use,” the bottom of page 5 of the “EA” appears to suggest that because the suggested combination of references is merely alleged to be “capable of operating in the same manner as the appellants invention,” an operational capability only being brought into existence based upon the teachings of the instant disclosure, is sufficient to meet such limitations. This line of faulty reasoning is clearly without merit and the Examiner offers no citation of authority for his patent slaying suggestion.

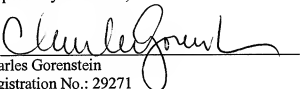
### III. CONCLUSION

Appellant relies on the arguments set forth in “AB” for those issues the Examiner has merely repeated those assertions set forth in the outstanding claim rejections. For all of the reasons set forth above, each of the rejections in the “EA” dated March 11, 2011, is improper. It is therefore respectfully requested that the Examiner be reversed on all grounds.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: May 10, 2011

Respectfully submitted,

By   
Charles Gorenstein  
Registration No.: 29271  
BIRCH, STEWART, KOLASCH & BIRCH, LLP  
8110 Gatehouse Road, Suite 100 East  
P.O. Box 747  
Falls Church, VA 22040-0747  
703-205-8000